ANNEX 1

Letter from NEPA approving the Terms of Reference (TOR) for EIA
Terms of Reference for EIA approved by NEPA

National Environment and Planning Agency

National Certification Body of Jamaica

ISO 9001: 2015 CERTIFIED

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Ref. #: 2024-13017-EP00360-4

17 March 2025

Mr. Noel McLean
Tropical Sugar Company Limited
61 Macaw Drive, Milk River
Clarendon

Dear Mr. McLean,

Re: Terms of Reference for Environmental Impact Assessment for Sugar Factory at Monymusk, Clarendon

Reference is made to the captioned.

The Agency has reviewed and **accepted** the Terms of Reference (TOR) Revision 2, dated March 2025, prepared by Environmental & Engineering Managers Limited.

This accepted TOR is to be appended to the EIA Report. The Report will be assessed against this TOR.

Should there be need for any clarification, please contact the undersigned at Tel# (876) 754-7540 ext. 2101 or by E-mail at gabrielle-jae.watson@nepa.gov.jm.

Sincerely,
National Environment and Planning Agency

Gabrielle-Jae Watson (Ms)
Manager, Applications Secretariat Branch
for Chief Executive Officer

GW/…

c. Ms. Ianthe Smith – EEM Limited
Mr. Randolph Watson – Manager (Acting), Applications Processing Branch
Mr. Miguel Nelson – Director (Acting), Applications Management Division

Terms of Reference for an Environmental Impact Assessment for a New Sugar Factory Tropical Sugar Company Ltd. Monymusk, Clarendon

Revision 2

MARCH 2025

Environmental & Engineering Managers Ltd.

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Draft Terms of Reference for an Environmental Impact Assessment
New Sugar Factory
Tropical Sugar Company Ltd.
Monymusk, Clarendon

1.0 Introduction

Tropical Sugar Company Ltd. (TSCL) proposes to establish a new sugar factory and associated wastewater treatment plant, power generation plant and water treatment plant at Monymusk, Lionel Town, Clarendon. The project will require the submission of several permit applications regulated under the Natural Resources Conservation (Permits and Licences) (Amendment) Regulations 2015, as well as the Natural Resources Conservation (Wastewater and Sludge) Regulations 2013. Based on the nature of the activities to be undertaken an Environmental Impact Assessment (EIA) will likely need to be prepared. The final decision on the need and scope of the EIA resides the national Environment and Planning Agency (NEPA) and it will be prepared in accordance with NEPA's requirements. NEPA also requires an EIA for wastewater treatment plants and these requirements will be incorporated into the full EIA.

2.0 Scope of EIA

The EIA will include:

1. Executive summary
2. Description of the project, reasons for the project
    a. Project Location and Siting
    b. Project Design Elements and Footprint
    c. Wastewater Treatment Plant design criteria
3. Policy, legal and administrative Framework
4. Environmental Description
    a. Biological Baseline [desktop]
        i. Flora and fauna
        ii. Agriculture and Forestry
    b. Physical Setting [desktop]
        i. Geology and Hydrostratigraphy
        ii. Topography and Drainage
        iii. Soils
        iv. Hydrology
5. Weather, Climate and Natural Hazards
6. Social and cultural setting
    a. Population and demographics
    b. Community & Utilities
    c. Geography and environment
    d. Housing and land
    e. Income and Employment
    f. Gender Equality and Empowerment
    g. Local Government Infrastructure and developments – municipal resources
    h. Sanitation and Environmental Public Health
7. Analysis of alternatives including the 'do nothing' alternative

8. Environmental impacts of proposed project (significance, positive, negative, cumulative, residual) associated
    a. Noise & noise nuisance
    b. Traffic
    c. Solid Waste
    d. Sewage & Trade effluent
    e. Air emissions
    f. GHG
    g. Oil or chemical spills
    h. Risk of Hazards and Accidents
9. Social impacts of proposed project (significance, positive, negative, cumulative, residual)
10. Mitigation action to reduce adverse environmental and social impacts
11. Environmental Management Plan and Monitoring programme to ensure mitigation measures are implemented and effective
12. *Maintenance and Operational Plan/Manual (NEPA requirement)*
13. *Septage and Sludge Management Plan (NEPA requirement for Wastewater Treatment Plants)*
14. Occupational Health and Safety Plans
15. Stakeholder and public involvement
16. References
17. Appendices

Deliverables:

- EIA report with the requisite photographs, maps, etc.
- 1 Digital and 6 hard copies

3.0 Permit and Licence Applications

The following list outlines the permit and lcience applications which need to be submitted to NEPA for the proposed project.

Permit Application Categories

1. Construction and operation of agro-processing facilities (including sugarcane)
2. Construction and operation of bottling facilities and boxing plants
3. Construction and Operation of power generation plants 200kW or above using renewable sources of energy
4. Construction and operation of water treatment and storage facilities, including desalination plants and water supply plants
5. Construction and operation of facilities for the storage of hazardous materials, toxic chemicals and other similar substances

Licence Application Categories (Trade Effluent)

1. Licence to construct treatment plant
2. Licence to operate treatment plant for the discharge of trade effluent
3. Licence to discharge trade effluent into the environment

Licence Application Categories (Sewage Effluent)

1. Licence to construct treatment plant
2. Licence to operate treatment plant for the discharge of sewage effluent

3. Licence to discharge sewage effluent into the environment

A licence application will also need to be prepared and submitted to the Water Resources Authority (WRA) for the abstraction of water for the intended water source for the new sugar factory.

4.0 The TOR for the EIA

1. Executive Summary

This section will allow for a clear understanding of the project proposal and summarize the significant results of the EIA study, e.g. positive and negative environmental, social and economic impacts; options considered; reasons for selection of the proposed option and the measures to be implemented to prevent or mitigate negative impacts or capitalise on positive impacts.

2. Description of the project, reasons for the project

The history and background of the project, project objectives and information on the nature, site location/existing setting, timing, duration, frequency, general site layout, pre-construction activities, construction methods, works and duration, and post construction plans will be covered.

All proposed infrastructure will be described including the sugar factory, wastewater treatment plant, power generation plant, water treatment plant, hazardous material storage etc.

This chapter will also provide a comprehensive description of the project in the construction and operational phases. The information provided will cover broader and more in depth details of project activities, with emphasis on those that will be require permits and licences from Regulatory Agencies, including information on the surrounding environment and project infrastructure necessary to identify and assess the environmental impacts of the project.

a. Project Location and Siting

Schematic plans and essential maps, including , map showing project location, project area, including project boundaries, aerial map of project areas, land use map of the study area, site layout plan and an area drainage contour map.

Maps showing the proposed location of the new sugar factory and all supporting infrastructure, will be presented as well as the coordinates of the new facility. The cane fields to supply the factory with raw material will also be presented on a map. The maps will show the location of the proposed factory to other areas of interest such as other industrial facilities, housing, farms, commercial establishments as well as surface and groundwater resources.

b. Project Design Elements and Footprint

All components of the project will be presented on a map and the design details associated with each will be described. A description of raw material inputs and system components, technologies designed for project components and processes to be used as well as

products and by-products generated, will be provided. Additionally an overview of proposed project infrastructure, including structural components of the wind turbines will be described in detail.

c. Wastewater Treatment Plant design criteria

A detailed description of Wastewater Treatment Plant (WWTP) will be provided to include but not be limited to:

- *Treatment system and design criteria*
- *Maintenance and operation plan*
- *Septage and sludge management plan*
- *Projected daily flows (average and peak)*
- *Effluent discharge details (including projected water quality)*
- *Treatment processes*
- *WWTP components*

Two (2) treatment plants will be constructed. A sewage treatment plant and a wastewater treatment plant to treat trade effluent.

In each case, the detailed design criteria for the proposed wastewater plant to serve the factory for trade and sewage effluent will be presented including the:

- *Inputs*
- *Treatment methodology including details of each component including the justification for the size of the treatment components*
- *Means of disposal*

The description will be supported by diagrams, pictures as required and all relevant assumptions and calculations will be clearly detailed. The accompanying design of the plant will be included.

3. Policy, legal and administrative Framework

An outline and summary of the pertinent regulations and standards governing environmental quality, safety and health, protection of sensitive areas, protection of endangered species, siting and land use control at the national and local levels will be detailed in this chapter of the EIA.

All applicable legislation, regulations, policies and standards in relation to the construction and operation of the development will be highlighted, including but not limited to the other development permits such as Planning and Building. An examination of the legislation should also include at minimum, legislation such as the NRCA Act and applicable regulations, the Water resources Act, the Public Health Act, the National Solid Waste management Act, the Town and Country Planning Act, and the Wild Life Protection Act as well as any relevant international convention/protocol/treaty where applicable.

4. Environmental Description

A description of the baseline conditions will be done via the collection of **only** secondary baseline data within the project area. The baseline data will be generated in order to give an overall evaluation of the existing environmental conditions, values and functions of the area, as follows:

- physical environment
- biological environment
- socio-economic and cultural constraints

Secondary data collection will extend within a 10km radius of the project area/boundary. The methodologies employed to obtain baseline and other data will be clearly detailed, with all limitations and assumptions clearly stated. Data gathered will be presented in both written and graphical form. This will be standard throughout the EIA.

a. Biological Baseline

A flora and fauna assessment will be conducted for the proposed site as follows:

	Methodology
Field work	
Flora	Flora will be examined across the site Lab work will be conducted to assist with the identification of the flora
Bird Survey	The bird survey will be carried out using the point count method. At each sample area point, there will be 3 points at least 150 m from each other where the point survey method will be carried out. Night and day assessments will be conducted. Lab work will be conducted to assist with the identification
Invertebrate Survey	The foliage will be searched at each sample site. Specimens will be collected from the active search and also by using the sweep. The specimens will be identified at the UWI collection. The study will also involve collecting land snails. A light trap study will be carried out for nocturnal insects. Night and day assessments will be conducted. Lab work will be conducted to assist with the identification
Herps: Day & Survey	At each sample site, the surrounding areas will be actively searched for herps. AudioMoths will be deployed in strategic areas to record the nocturnal frogs in the area. Species will be identified from seven days of acoustic recordings. Night and day assessments will be conducted. Lab work will be conducted to assist with the identification
Bat survey: Day & Night	This entails looking for areas where bats are likely to be found, including areas where the endemic tree bat roosts. The AudioMoth detectors will be deployed within the area throughout the project area. They will be left in the field for 7 days; 1 field day of recordings will take 2 days of lab time to analyse. 5 bat acoustic devices will be deployed in the field. The bat survey component will take 3 field days, 2 days to actively search for bats and deploy equipment, the area will be reassessed a week later and the field equipment will also be retrieved. It will take 2 days to analyse data from each device. Night and day assessments will be conducted. Lab work will be conducted to assist with the identification

b. Physical Setting [desktop & field]

A description of the existing **soil, geology, hydrology and hydrostratigraphy** will be provided. The description will focus on the geology of the proposed site, the distribution of soil types in the proposed study areas using appropriate soil survey procedures and the implications of environmental effects on ecosystem sustainability.

Water quality for aquatic environments or surface water features, wells or coastal waters in the vicinity of the development will be included in the scope. Baseline water quality should include study areas and associated environs and control sites for both wet and dry seasons, i.e. monthly water quality monitoring and sampling conducted for a period of **no less than** six (6) months, with 3 months covering the wet season and 3 months covering the dry season. Samples should include a control. Recent existing data (within the last 2 years), meeting the stated criteria will be used if/where available.

Obvious **sources of existing pollution** and the extent of contamination affecting the physical environment will be described.

5. Weather, Climate and Natural Hazards

A description of the natural hazards affecting the project area will be described. Meteorological data covering the following will be incorporated in the EIA report.

The meteorological data for at least a 10 year period will be presented from the nearest meteorological station

- Wind speed and direction
- Rainfall
- Relative humidity
- Temperature

Historical databases will be accessed for data on hurricanes, earthquakes and flooding

- History of hurricanes
- History of earthquakes
- History of flooding

6. Social and cultural setting

The section on socio-economic and cultural environment will provide a detailed description of:

a. Population Demographics: population size, age distribution, gender composition
b. Community structure: community groups, community programmes and projects
c. Social infrastructure and facilities: education, health and welfare facilities and infrastructure
    i. Gender Equality and Empowerment
d. Infrastructure & Utilities: water, electricity, telecommunications
e. Local Government Infrastructure and developments – municipal resources
f. Sanitation and Environmental Public Health
g. Economic structure: Employment and income, economic opportunities, programmes and projects
h. Cultural traditions/customs
i. All existing resource users (including traditional users) ranging from subsistence utilization of the natural resources to commercial activities

j. Archaeological features: The historical importance (heritage, archaeological sites and feature) and other material assets of the area will be examined if applicable. **(Not applicable based on Site Assessment conducted by Jamaica National Heritage Trust (JNHT)**
k. Land Use: Present and proposed land use (including housing, settlements, commercial, farming and other uses. Details including nature and magnitude, proximity to site etc. will be included.);
l. Transportation and traffic considerations: transportation of heavy equipment (particularly in the construction phase), planned development activities; issues relating to public health and safety will be covered.
m. Public Perception: An assessment of public perception of the proposed development will be conducted using appropriate methods and tools such as public meetings and/or questionnaires/surveys.

7. Analysis of alternatives including the 'do nothing' alternative

An examination and evaluation of the project and potential alternative of not proceeding with it will be taken into consideration in the EIA. The evaluation will include:

- An analysis of the alternative means of carrying out the Project, including need for the project, alternative sites, alternate projects and variations to the scope of the project (major components included and excluded) and if any of the alternatives could result in a minimization of adverse impacts. For the project components, a comparison of their environmental and technical performance potential and other relevant variables will be included.
- A discussion on the status of any ongoing analyses, including a discussion of the options not chosen and the rationale for their exclusion.
- Contingency plans if major project components or methods prove infeasible or do not perform as expected; and
- The implications of a delay in proceeding with the Project, or any phase of the Project.
- Examination of the 'do nothing' alternative

8. Environmental impacts of proposed project (significance, positive, negative, cumulative, residual)

A detailed analysis of the various project components will be done in order to examine and identify the major potential environmental, social and public health issues of concern and indicate their relative importance to the development project. The assessment of impacts will include, but will not be limited to the identification of the potential negative and positive environmental impacts of the project at all stages, including an assessment of the magnitude and importance of the impacts.

In assessing the potential impacts related to the proposed project, consideration will be given to the following:

- occupational exposure, health and safety measures and population exposure
- natural hazard risk (hurricanes, earthquakes, flooding potential)
- aesthetics from construction and operations
- loss of and damage to geological and paleontological features
- loss of species and natural features
- habitat loss and/or fragmentation
- biodiversity/ecosystem functions
- water quality from sewage and trade effluent, oil and chemical spills

- air quality from air emissions (to include both point and fugitive emissions)
- socio-economic and cultural issues
- historic landscape, architecture and archaeology of the site
- noise
- solid waste
- traffic including transportation of equipment, including but not limited to blockage of roadways by heavy duty vehicles and equipment
- hazardous waste from operations

The assessment will examine all potential impacts on the physical, biological and social environments. This assessment will be undertaken for each project activity and presented in a matrix for all phases of the project. It will cover:

i. The types of impact:
    - Significant positive and negative
    - Immediate, short and long term
    - Direct and indirect
    - Irreversible
    - Cumulative

ii. The project phases: Construction, operational and decommissioning phases

The extent and quality of the available data will be characterised, explaining significant information deficiencies and any uncertainties associated with the predictions of impacts.

Residual Impacts: Identify any residual negative impacts for which no solution for mitigation has been proposed.

9. Air Emissions Inventory

An Air Emissions Inventory (AEI) will be prepared for the sugar factory operations, primary among which the proposed bagasse fired power generation plant will be a potential significant source of air emissions. The AEI will determine the category within which the facility falls, that is, major, significant or neither and if an air pollutant discharge licence application will need to be submitted to NEPA. Note that the Air Dispersion Model and Licence application will be conducted as a separate exercise if it is confirmed to e require.

10. Social impacts of proposed project (significance, positive, negative, cumulative, residual)

Objective and Scope of Work

The objective of the social impact assessment is to conduct a socially inclusive and gender-responsive social impact assessment of the proposed vertically integrated sugar cane cultivation and sugar production factory. The results of the social impact assessment will help to support the identification, assessment, evaluation and reporting of the potential socio-economic effects of the proposed project, improve the design and operations of the factory, and guide the resolution of potentially adverse impacts identified.

The scope of work for the social impact assessment will include a description of the social environment and will involve the provision of data on the socio-economic landscape of communities within the delineated study area. This will include relevant information on

demography, labour force, housing, municipal services and facilities, cultural and historical sites and land use. Specifically, the works to be undertaken include:

1. Description of the Social Baseline- Describe the baseline social characteristics of the project area, including but not limited to a baseline of the social and cultural environment, including present and projected, where appropriate (i.e., population, employment and labour market, economic activities, land use, planned development activities, community social structure, cultural and historical sites, vulnerable groups; etc.)The boundaries of the study area for the assessment, as well as any adjacent areas that should be considered with respect to the Project should be specified.

2. Assessment of Impacts-Description of the project's potential social and gender impacts (positive, negative, long term, short term and cumulative impacts), during the construction and operations phases.

3. Description of Mitigation Measures: Based on the findings of the SIA, identify feasible and cost-effective mitigation measures to reduce potential direct and indirect negative social/gender adverse impacts and risks identified for both the construction and operational phases of the Project and enhance positive impacts where identified. Development, where required, the relevant social plans to monitor the implementation of the mitigation measures and impacts of the project. To the extent possible, mitigation measures should emphasize the use of nature-based solutions.

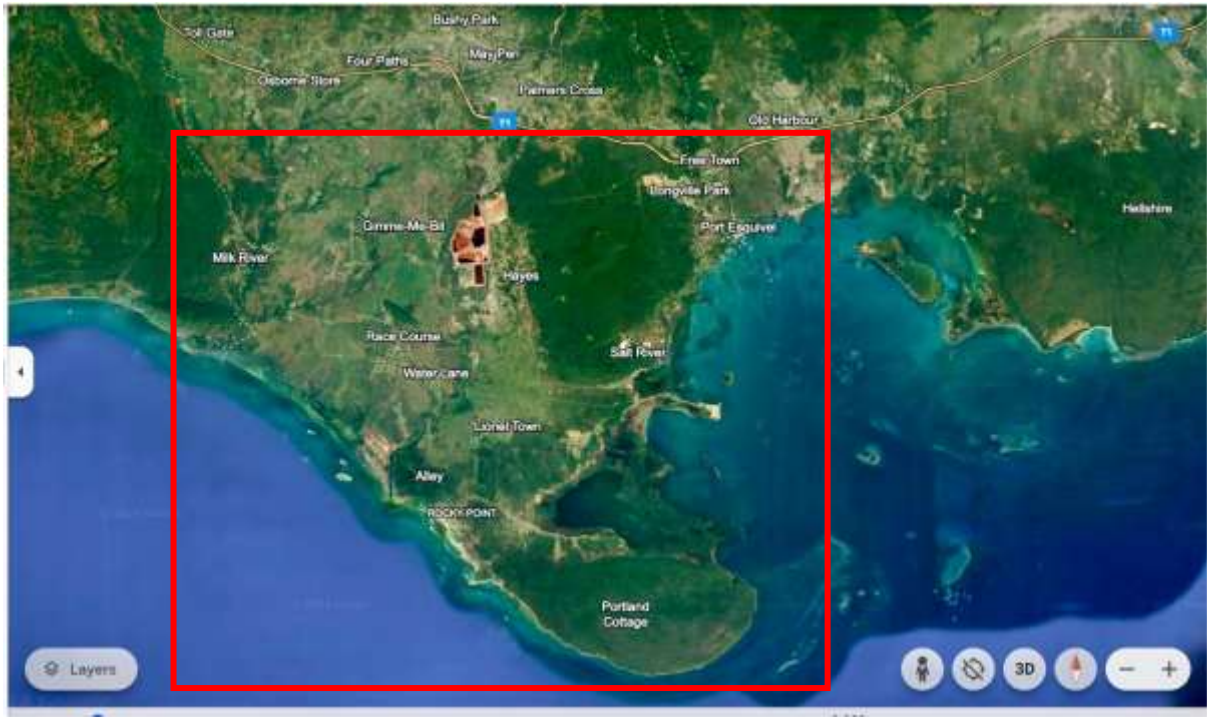
Methodology

This study will be conducted using a mixed-method approach, with differential participatory and consultative methodologies used in engaging various stakeholders and institutional actors. The main objective of the approach is to assess, from the perspective of the beneficiaries the potential benefits and opportunities to be derived from the operation of a vertically integrated sugar cane cultivation and sugar production factory, and ascertain the ways in which the proposed project can improve and/or may affect the population of the communities surrounding the proposed project site. Although the operation in the initial stages will include the production of sugar, when fully operational and equipped, the factory will also undertake the manufacturing and distribution of locally and export intended downstream products inclusive of molasses, cane liquor, water for retail consumption and pharmaceutical products, among others.

A combination of qualitative and quantitative data collection methods and tools will be used in conducting the social impact assessment. Qualitative methods will include a desk review, focus group discussions, and key informant and institutional actor interviews. The quantitative method will involve the completion of a socio-economic and beneficiary perception and experience survey. The methodology, which is designed around a participatory approach, is in line with the general requirements of the World Bank Environmental and Social Framework and standards for conducting environmental/IFC performance Standards on Environmental and Social Sustainability and social impact assessments and the International Association of Impact Assessment (IAIA).

Preliminary Study Area

The pre-scoping delineated study area extends from the communities east of Milk River to the communities west of Salt River Bay and includes communities within the Vere Plains and lower Rio Minho watershed.



Scoping

The first step in executing the assessment of the potential impacts of the proposed integrated sugar cane cultivation and sugar production factory is determining the nature and scope of the problem to be addressed. This concretises the issue and provides a framework within which actions and scenarios can be contemplated and impacts assessed. Hence, the nature and scope of the issue will influence the focus of the assessment's mitigation measures and the intended stakeholders, actors and audiences that will be the target of such measures.

Comprehensive desk-based review of existing literature of key social aspects (geographical, social, cultural and economic), site/field visits, and the hosting of consultations with key stakeholders will be the main methodological approach used in the scoping phase of the SIA. The stakeholder consultation will include a stakeholder identification and mapping process to identify all relevant stakeholders. Stakeholder engagement activities will be geared towards garnering feedback from identified stakeholders on the proposed project and scope of the SIA. Desk review and site visits will be used, where necessary, to gather and present baseline information on the various social components.

Document Review

The Document Review will provide secondary data on the demographic, socio-economic, cultural and community landscape of communities within the final defined study area. The main objective of the documentary review is to provide an in-depth understanding of local communities, which will include the social and economic environment and overall baseline description of key socio-economic variables within the project areas. The baseline will include a description of

- demographic factors (population-sex, age, population density, etc.)
- socio-economic factors (economic activities, sources of income etc.,)
- social organisations (civil society organisations, non-governmental organisations,)
- municipal and community institutions (health, education, etc.)
- environmental factors (natural resources, protected areas

- cultural, historical and community factors
- vulnerable and marginalized groups (persons with disabilities, elderly, children, women, fishers etc.)

Documents to be reviewed will include:

- National Sustainable Development Plan 2020-2035
- Population and housing census
- Labour force survey reports
- Poverty assessment reports
- Survey of Living Conditions
- National Accounts Report
- National Budget
- Voluntary National Review Report
- Medium Term Action Plan (2022-2024)

The social baseline derived from the document review encourages identification of gender-specific risks and vulnerabilities and exploration around key social, economic and environmental issues impacting women and men in the project areas. The information gathered will be integrated into the design of the primary data collection instruments including identification of specific actions to address existing and potential issues

Quantitative

The quantitative data collection will consist of the administration of a socio-economic and beneficiary perception and experience survey. The Survey will be executed in three phases (see below):

a. Design and Development of instrument and data collection procedures, including recruitment and training of interviewers.
b. Data collection and Processing
c. Analysis of data

Figure 1: Phases of Survey Implementation

The questionnaire will consist of a standard set of questions that cover the following thematic areas, among others:

- Socio-demographics, including current family composition
- Level of education
- Housing and Land characteristics
- Employment and income characteristics, including livelihood characteristics
- Community and municipal services and infrastructure
- Cultural, archaeological and heritage characteristics
- Hazard Risks and Vulnerabilities
- Social and community challenges

- Project awareness and perception

The questionnaire will also cover respondents' perceptions of the proposed flood and coastal rehabilitation intervention measures, including concerns and benefits. A Likert scale will be used for some perception questions, asking respondents to rate their experiences on a scale of 1-5. Questions will be presented on a Likert scale.

Sampling Methodology And Design

To achieve the objectives of the study, the socio-economic and beneficiary perception survey will assess the responses of respondents who are 18 years and older who are usual residents of the communities identified in the final defined SIA study area and are living in private dwelling units at the time of the survey. The sampling frame for the survey will be the 2011 Population and Housing Census or the most recent demographic data, if available.

The data will be collected using a convenience-based sampling technique, as the sample is indicative, and not representative of the population of communities within the pre-scoped project boundary.

Area of Administration (Perception Survey)

The perception and experience survey will be administered in communities within the immediate vicinity of the factory.

Table 2: Total Combined Population of Communities located in pre-scoping project boundary based on 2011 Census

Community Name	Enumeration District	Population	
Alley	SE 102	2011	2023*
Amity Hall	SW 77	331	347
Chesterfield (Lionel Town)	SE 100	375	393
Cook's Gate (Parnassus)	SW 42	643	674
Gimme-me- Bit	SW 54-56	883	925
Hayes	SE 71-76, 78-90	10,639	11,148
Hunter's Village	SE 117	736	771
Kemp's Hill	SW 57, 58	573	600
Lionel Town	SW 79-82, SE 91, 97-99	3,044	3,190
Longwood	SE 103	509	533
Milkspring	SW 51	282	295
Mitchell Town	SE 92-95	1,452	1,521
Monymusk (Lionel Town)	SW 78	Factory	Factory
Morelands (Mitchell Town)	SE 92	404	423
New Yarmouth	SW 59	230	241
Parnassus, Rhymesbury	SW 34, 43	1,581	1,657
Perrins (Lionel Town)	SW 83	191	200
Portland Cottage	SE 118-121	2,040	2,138
Pusey Hall (Alley)	SE 101	655	686
Race Course	SW 60, 61, 68-73	2,949	3,090

Community Name	Enumeration District	Population	
Rocky Point	SE 110-116	2,473	2,591
Salt Savanna	SE 108, 109	598	627
Sedgepond	SW 63	480	503
Springfield (Milk River)	SW 66	137	144
Vere	SW 64, 65	833	873
York Town	SW 37-41	1,623	1701
		33,661	35,271
	*Note- estimated using 2011 intercensal growth rate of 0.36%		

Data Collection And Processing

Data for the socio-economic surveys will be primarily collected electronically by trained interviewers using computer-assisted personal interviewing (CAPI) with the use of tablet computers. It is proposed that respondents be offered a small incentive for participation (see financial proposal). Interviewers will be recruited and undergo a short training on questionnaire administration, interview techniques and strategies, and the administration of the socio-economic and beneficiaries experience and perception survey (SBEP).

Qualitative Approach

The qualitative approach in data collection will comprise Focus Group Discussions and Key Informant and Institutional Actor Interviews. The Focus Group Discussions and Key Informant Interviews will provide most of the in-depth primary qualitative data for this study.

Focus Group Discussions

The focus group discussions (FGDs) will provide primary data on community members experiences with the operation of manufacturing plants and sugar factories within their communities. This will provide in-depth data on any socio-economic and environmental impacts and barriers community members may have experienced as result of these environmental factors and provide insights into any differentials that may exist between women and men. These FGDs are also intended to provide data and information on the gender dimensions of the perceived potential benefits and opportunities and concerns that community members may experience as a result of proposed activities associated with the construction and operation of the sugar factory.

For this study, the target population will be disaggregated by sex, to adequately capture any differentials in beneficiaries' perceptions of the proposed project. One (1) focus group session will be held with members of the communities within the designated study area as agreed with the client. A purposive sampling technique will be adopted for selection of participants to the FGD's. The proposed preliminary breakdown of the FGDs is provided in Table 2. The final categories and number of FGDs will be undertaken following the scoping activities and desktop review.

Table 2: Focus Group Discussions By Category

Respondent/Participant category	Number of groups	Number of participants
Community members, Farmers and Business Operators (including MSMEs), Vulnerable stakeholders (Persons with Disabilities, elderly, women)	1	8-12
Total	**1**	**12**

A FGD guide will be designed for use, in consultation with the client, and will be refined after preliminary discussions with key informants and institutional actors to help more clearly identify the pertinent issues associated with the operation of the factory. Preliminary design concepts will also be presented to participants in the FGD sessions to garner their feedback on proposed interventions and perceived impacts. The groups will be convened either face-to-face and/ or virtually as is feasible and agreed with the client.

Target Area

Participants will be sought from the communities where cane lands are situated and those closest to the factory.

Key Informant Interviews

Qualitative in-depth interviews are an ideal method for detailed discussion and understanding of the phenomenon being investigated. Key informant interviews will be conducted with institutional actors and key stakeholders, including community and municipal leaders and representatives and leadership in the ministries, department and agencies agreed with the client, if required. These interviews will be conducted virtually and/or in-person using an approved interview schedule.

Where permitted, key informant, individual interviews and FGDs will be audio recorded, and supplementary notes taken during the engagement exercises. For the socio-economic survey, data analysis will be done using Excel. Data gathered from the surveys will be coded to arrive at clusters to tabulate percentage responses. The data will be analysed primarily through frequency tables and cross-tabulations to filter the required information and key demographic variables for the analyses such as sex, age, education etc.

Impact Identification And Assessment

Based on the findings of the baseline assessments, an impact analysis will be undertaken to identify and assess various social aspects and impacts associated with the proposed project. The impact analysis will be done through the application of an impact matrix, with significance ratings divided into four categories: negligible, minor, moderate and major/high.

Mitigation And Monitoring

For the construction and operational phases of the project social mitigation and monitoring measures will be identified and where necessary, relevant management plans to guide the implementation mitigation and monitoring measures will be developed. The Mitigation Hierarchy will be used as the framework for identifying, prioritizing and quantifying mitigation measures.

The four-step process- avoid, minimize, restore and provide offsets for unavoidable impacts, will be used to guide mitigation planning and the identification and development of appropriate mitigation measures.

11. Mitigation action to reduce adverse environmental and social impacts

This section will outline the details of the mitigation methods proposed to reduce adverse effects of the project, best environmental practices and conservation of natural resources.

Mitigation and abatement measures will be formulated for each potential negative impact identified. This will also include recommendations for the maximization and enhancement of beneficial impacts, energy conservation and the use of green building technology.

12. Environmental Management Plan and Monitoring programme to ensure mitigation measures are implemented and effective

This section will outline and include details for an environmental monitoring programme. An environmental management and monitoring plan to monitor the effectiveness of the mitigation measures for the construction, operation and decommissioning phases will be developed. For the long-term operations of the site the monitoring plan will include:

- an EHS Management Plan
- a Historic Preservation Plan (if necessary) for the management of the natural, historical and archaeological environments of the project **(Not applicable based on Site Assessment conducted by Jamaica National Heritage Trust (JNHT)**

At the minimum the monitoring programme and report will include:

- An introduction outlining the need for a monitoring programme and the relevant specific provisions of the permit and/or licence(s) granted.
- The activity being monitored and the parameters chosen to effectively carry out the exercise, including avifaunal mortality
- The methodology to be employed and the frequency of monitoring.
- The sites being monitored.
- The systems to be instituted to ensure that corrective measures are employed (when necessary) based on results obtained through monitoring
- Frequency of reporting to NEPA

13. Maintenance and Operational Plan/Manual (NEPA requirement for Wastewater Treatment Plants)

The plan will outline the recommended maintenance activities and a schedule for the conduct of same to ensure optimal operation of the plant.

14. Septage and Sludge Management Plan (NEPA requirement for Wastewater Treatment Plants)

A septage and sludge management plan will be developed giving consideration to environmental, occupational health and safety standards. Where there are opportunities for reuse or recycling, these will be included.

15. Occupational Health and Safety Plans

This section will outline the considerations for an occupational health and safety programme for the construction, operation and decommissioning phases.

16. Stakeholder and public involvement

There will be consultation with stakeholders throughout the EIA including a perception survey and a focus group meeting conducted in the communities immediately surrounding the site of the proposed project.

A description of the public participation methods, timing, and information provided to the public and stakeholder target groups will be included in this section of the EIA. Public input that has been incorporated into the proposed project design and environmental management programmes will be presented.

a. Public Consultation Meeting

A public meeting will be held, **if required by NEPA**, to present the findings of the EIA after submission of the draft EIA report to the Agency. The objective is to inform stakeholders and solicit and discuss comments from the public on the proposed development. Verbatim notes of the proceedings will be documented. This will be a separate submission from the EIA report.

The EIA report will be updated based on feedback from the Public Consultation Meeting if necessary and the final EIA will be submitted to NEPA.

17. Conclusion and Recommendations

The conclusions coming out of the EIA study will be summarised and the recommendations presented in this section.

18. References

References will be included.

19. Appendices

Supporting documents, maps, diagrams etc. will be included in the Appendices as well as the qualifications of the EIA Team.

5.0 Team Qualifications

Ianthe T. Smith, M. Eng. Environmental Engineering, P.E., Member JIE, Member JIEP
Principal Consultant/ Director Environmental & Engineering Managers Ltd.

Ianthe Smith is a Jamaican national and an Environmental Engineering Consultant. She has a BSc. in Civil Engineering (1986) from the University of the West Indies, St. Augustine, Trinidad. In 1994 she graduated from the University of Toronto, Canada, with a Master of Engineering degree in Environmental Engineering, being the recipient of a CSCE/CIDA scholarship.

Mrs. Smith's education also includes Project Management Training from the University of New Orleans (Jamaican Chapter) and Indoor Air Quality Assessment training from the Indoor Air Quality Association (IAQA). She is a trained and experienced Environmental Management Systems (EMS) Lead Auditor and also has Quality Management Systems and HACCP5 training.

She worked with the Natural Resources Conservation Authority (NRCA) (now the National Environment and Planning Agency (NEPA)) from1994 to 1998 where she was the Senior Director for Pollution Control and Waste Management. While there she was instrumental in the development of environmental standards and legislation and worked with industries regarding the establishment of systems to manage their waste to prevent pollution and deterioration of the environment. She also played a lead role in the development of the permit and licence system for new projects that are likely to have adverse impacts on the environment.

She has been an environmental engineering consultant since 1999, was the Managing Director for Environmental and Engineering Managers Limited since its inception in 2001 until 2016 and is currently a Director of the company.

Her expertise includes Environmental Impact Assessments, Environmental Audits, Indoor Air Quality Assessments, Water and Wastewater Engineering, Solid Waste Management, Implementation of Environmental Management Systems (EMS) and Planning and Controlling Construction.

Andre Marcel Smith, EEM Environmental Scientist and Marine Specialist

Andre graduated from the University of the West Indies, Mona, Jamaica in 2013 with the BSc. Marine Biology (Major) and Conservation Biology (Minor) and Master of Environmental Management with Distinction from Massey University, New Zealand in 2018. Andre has been working at EEM in this capacity since 2013.

Dominic Neita, EEM Environmental Engineer

Dominic is an Environmental Engineer who holds a BSc. Degree (Second Class Honours) in Civil with Environmental Engineering from the University of the West Indies, St. Augustine, Trinidad (2019). He has been working at Environmental and Engineering Managers Ltd. for the past four years on several projects.

Brenton Bartley, EEM Environmental Engineer

Brenton holds a BSc. Degree (First Class Honours) in Civil Engineering from the University of the West Indies, Mona Campus (2022). He joined Environmental and Engineering Managers Ltd as an Environmental Engineer in 2022.

Kamille Dwyer-Thomas, Urban Planner and Environmental Consultant

Kamille holds a M.Sc. in Planning and Development (University of the West Indies, St. Augustine –Distinction) and a B.A. in Geography (University of the West Indies, Mona –Second Class Hons.). Over the past 14 years, she has worked on several research projects, land use surveys, and environmental and social impact assessments in the Caribbean, including Jamaica, Trinidad and Tobago, Antigua and Barbuda, and St. Kitts. She has worked with several public sector agencies in Jamaica, including the Planning Institute of Jamaica and the Ministry of Water and Housing, conducting socio-economic, land use and environmental surveys in various rural and urban communities.

Damion Whyte, Terrestrial Biologist

Damion's qualifications include:

- 2016 PhD (pending) Zoology, "To Evaluate the Goat Islands for the Re-introduction of the Jamaican Iguana", University of the West Indies (UWI), Mona, Jamaica

- 2014 Post Graduate Diploma in Environmental Management for Developing and Emerging Countries, Centre for International Postgraduate Studies of Environmental Management, Dresden University of Technology, Germany.